- [101] Dertimanis, V., Chatzi, E. (2020) Sensor Networks in Structural Health Monitoring: From Theory to Practice, Journal of Sensor and Actuator Networks, 9(4), 47, <a href="https://doi.org/10.3390/jsan9040047">https://doi.org/10.3390/jsan9040047</a>
- [100] Zaccherini, R., Palermo, A., Marzani, A., Colombi, A., Dertimanis, V., and Chatzi, E. (2020) Mitigation of Rayleigh-like waves in granular media via multi-layer resonant metabarriers, Applied Physics Letters 117:25, <a href="https://doi.org/10.1063/5.0031113">https://doi.org/10.1063/5.0031113</a>
- [99] Puerto Tchemodanova, S., Tatsis, K., Sanayei, M., Chatzi, E. and Dertimanis, V. (2020) State estimation for prediction of fatigue life for a rollercoaster connection subjected to operational multiaxial nonproportional loading, *accepted for publication* in the Journal of Structural Engineering
- [98] Dertimanis, V., Chatzi, E. and Masri, S. (29020) On the Active Vibration Control of Nonlinear Uncertain Structures, *accepted for publication* in the Journal of Applied and Computational Mechanics.
- [97] Ou, Y., Tatsis, K., Dertimanis, V., Spiridonakos, M., and Chatzi (2020) Vibration-based Monitoring of a Small-scale Wind Turbine Blade Under Varying Climate Conditions. Part I: An Experimental Benchmark, Structural Control and Health Monitoring, <a href="https://doi.org/10.1002/stc.2660">https://doi.org/10.1002/stc.2660</a>
- [96] K.E. Tatsis, V.K. Dertimanis, C. Papadimitriou, E. Lourens, E.N. Chatzi (2020) A general substructure-based framework for input-state estimation using limited output measurements, Mechanical Systems and Signal Processing, Volume 150, 2021, 107223, ISSN 0888-3270, <a href="https://doi.org/10.1016/j.ymssp.2020.107223">https://doi.org/10.1016/j.ymssp.2020.107223</a>
- [95] Tatsis, K., Dertimanis, V., Ou, Y., and Chatzi E. (2020) GP-ARX-Based Structural Damage Detection and Localization under Varying Environmental Conditions. J. Sens. Actuator Netw. 9, 41, https://doi.org/10.3390/jsan9030041
- [94] Fu, H., Theodossiades, S., Gunn, B., Abdallah I., Chatzi, E. (2020) Ultra-low frequency energy harvesting using bi-stability and rotary-translational motion in a magnet-tethered oscillator. Nonlinear Dynamics, https://doi.org/10.1007/s11071-020-05889-9
- [93] Kocur, G.K., Harmanci, Y.E., Chatzi, E. et al. (2020) Automated identification of the coefficient of restitution via bouncing ball measurement, Archives of Applied Mechanics, <a href="https://doi.org/10.1007/s00419-020-01751-x">https://doi.org/10.1007/s00419-020-01751-x</a>
- [92] Simpson, T., Dertimanis, V., Chatzi, E., Towards Data-Driven Real-Time Hybrid Simulation: Adaptive Modelling of Control Plants, Frontiers in Built Environment, section Computational Methods in Structural Engineering, accepted for publication, <a href="https://doi.org/10.3389/fbuil.2020.570947">https://doi.org/10.3389/fbuil.2020.570947</a>
- [91] Colombi, A., Zaccherini, R., Aguzzi, G., Palermo, A., Chatzi, E. (2020) Mitigation of seismic waves: Metabarriers and metafoundations bench tested, Journal of Sound and Vibration, Volume 485, 2020, 115537, ISSN 0022-460X, <a href="https://doi.org/10.1016/j.jsv.2020.115537">https://doi.org/10.1016/j.jsv.2020.115537</a>
- [90] Agathos, K., Bordas, S. and Chatzi, E. (2020) Parametrized reduced order modeling for cracked solids, International Journal for Numerical Methods in Engineering, accepted for publication, <a href="https://doi.org/10.1002/nme.6447">https://doi.org/10.1002/nme.6447</a>
- [89] Martin-Sanz, H., Herraiz, B., Brühwiler, E., and Chatzi, E. (2020) Shear-Bending Failure Modeling of Concrete Ribbed Slabs Strengthened with UHPFRC, Engineering Structures, 222: 110846 https://doi.org/10.1016/j.engstruct.2020.110846
- [88] Lai, Z., Alzugaray, I., Chli, M., and Chatzi, E. (2020) Full-field Structural Monitoring using Event Cameras and Physics-informed Sparse Identification, Mechanical Systems and Signal Processing, 145, 106905, <a href="https://doi.org/10.1016/j.ymssp.2020.106905">https://doi.org/10.1016/j.ymssp.2020.106905</a>
- [87] Zaccherini, R., Colombi, A., Palermo, A., Dertimanis, V.K., Marzani, A., Thomsen, H.R., Stojadinovic, B. and Chatzi, E. (2020) Locally Resonant Metasurfaces for Shear Waves in Granular Media, Physical review Applied, 13, 034055, <a href="https://link.aps.org/doi/10.1103/PhysRevApplied.13.034055">https://link.aps.org/doi/10.1103/PhysRevApplied.13.034055</a>

- [87] Abdallah, I., Tatsis, K., and Chatzi, E. (2020) Unsupervised local cluster-weighted bootstrap aggregating the output from multiple stochastic simulators, Reliability Engineering and System Safety, 199, 106876, ISSN 0951-8320, <a href="https://doi.org/10.1016/j.ress.2020.106876">https://doi.org/10.1016/j.ress.2020.106876</a>
- [86] Avendaño-Valencia, L.D., Chatzi, E.N., Tcherniak, D. (2020) Gaussian Process Models for Mitigation of Operational Variability in the Structural Health Monitoring of Wind Turbines, Mechanical Systems and Signal Processing, Volume 142, 2020, 106686, ISSN 0888-3270, <a href="https://doi.org/10.1016/j.ymssp.2020.106686">https://doi.org/10.1016/j.ymssp.2020.106686</a>
- [85] Avendaño-Valencia, L.D. and Chatzi, E. (2020) GPR-VAR Surrogates for Identification Of Structures Under Varying Operational Conditions, Probabilistic Engineering Mechanics, 60, 103035, ISSN 0266-8920, https://doi.org/10.1016/j.probengmech.2020.103035
- [84] Martín-Sanz Henar, Tatsis Konstantinos, Damjanovic Domagoj, Stipanovic Irina, Sajna Aljosa, Duvnjak Ivan, Bohinc Uros, Brühwiler Eugen, Chatzi Eleni (2019). Getting More Out of Existing Structures: Steel Bridge Strengthening via UHPFRC, Frontiers in Built Environment, 5, 26, <a href="https://doi.org/10.3389/fbuil.2019.00026">https://doi.org/10.3389/fbuil.2019.00026</a>, ISSN=2297-3362
- [83] Martín-Sanz, H., Tatsis, K., Dertimanis, V.K. Avendaño-Valencia, L.D., Brühwiler, E. & Chatzi, E. (2019) Monitoring of the UHPFRC strengthened Chillon viaduct under environmental and operational variability, Structure and Infrastructure Engineering, https://doi.org/10.1080/15732479.2019.1650079
- [82] Juliana Felkner, Joseph Schwartz, and Eleni Chatzi (2019) Framework for Balancing Structural Efficiency and Operational Energy in Tall Buildings, Journal of Architectural Engineering, 25(3).
- [81] Kyriaki Gkoktsi, Agathoklis Giaralis, Roman Klis, Vasilis K Dertimanis, Eleni N. Chatzi (2019), Output-only vibration-based monitoring of civil infrastructure via sub-Nyquist/compressive measurements supporting reduced wireless data transmission Journal: Frontiers in Built Environment, section Structural Sensing, 5:111, <a href="https://doi.org/10.3389/fbuil.2019.00111">https://doi.org/10.3389/fbuil.2019.00111</a>
- [80] Limongelli, M-P., Chatzi, E., Anžlin, A. (2018) Condition Assessment of Roadway Bridges: From Performance Parameters to Performance Goals, The Baltic Journal Of Road And Bridge Engineering, 13(4), https://doi.org/10.7250/bjrbe.2018-13.421
- [79] An, Y., Chatzi, E., Sim S-H., Laflamme, S., Blachowski, B., Ou, J. (2019) Recent Progress and Future Trends on Damage Identification Methods for Bridge Structures, Structural Control and Health Monitoring, https://doi.org/10.1002/stc.2416
- [78] V.K. Dertimanis, E.N. Chatzi, S. Eftekhar Azam, C. Papadimitriou (2019) Input-state-parameter estimation of structural systems from limited output information, Mechanical Systems and Signal Processing, Volume 126, 711-746, ISSN 0888-3270, <a href="https://doi.org/10.1016/j.ymssp.2019.02.040">https://doi.org/10.1016/j.ymssp.2019.02.040</a>
- [77] Egger , A.; Pillai , U.; Agathos , K.; Kakouris , E.; Chatzi , E.; Aschroft , I.A.; Triantafyllou , S.P. Discrete and Phase Field Methods for Linear Elastic Fracture Mechanics: A Comparative Study and State-of-the-Art Review. Appl. Sci. 2019, 9, 2436.
- [76] Harmanci, Y., Gülan, U., Holzner, M., Chatzi, E. (2019) A Novel Approach for 3D-Structural Identification through Video Recording: Magnified Tracking, Sensors 2019, 19(5), 1229; <a href="https://doi.org/10.3390/s19051229">https://doi.org/10.3390/s19051229</a>
- [75] Agathos K., Chatzi, E., and Bordas, S. (2019) Unified enrichment approach addressing blending and conditioning issues in enriched finite elements, Computer Methods in Applied Mechanics and Engineering, 349, pp. 673-700.
- [74] Gabriele Ravizza, Rosalba Ferrari, Egidio Rizzi and Eleni N. Chatzi (2019) Effective Heterogeneous Data Fusion procedure via Kalman filtering, Smart Structures and Systems (SSS), An International Journal, 22(5), 631-641, <a href="http://dx.doi.org/10.12989/sss.2018.22.5.631">http://dx.doi.org/10.12989/sss.2018.22.5.631</a>
- [73] G. Granello, C. Leyder, A. Frangi, A. Palermo, and E. Chatzi (2019) Long-term performance

- assessment of an operative post-tensioned timber frame structure, ASCE's Journal of Structural Engineering, 145(5):04019034, <a href="http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0002308">http://dx.doi.org/10.1061/(ASCE)ST.1943-541X.0002308</a>
- [72] Long Wu, Paolo Tiso, Konstantinos Tatsis, Eleni Chatzi, Fred van Keulen (2019), A modal derivatives enhanced Rubin substructuring method for geometrically nonlinear multibody systems, Multibody Syst Dyn, 45, 57-85, https://doi.org/10.1007/s11044-018-09644-2
- [71] Ferrari, R., Froio, D., Rizzi, E., Gentile, C., Chatzi, E. (2018) Model updating of a historic concrete bridge by sensitivity- and global optimization-based Latin Hypercube Sampling, Engineering Structures, 179,139-160, <a href="https://doi.org/10.1016/j.engstruct.2018.08.004">https://doi.org/10.1016/j.engstruct.2018.08.004</a>
- [70] Agathos, K, Chatzi, E., and Bordas, S. (2019) Improving the conditioning of XFEM/GFEM for fracture mechanics problems through enrichment quasi-orthogonalization, Computer Methods in Applied Mechanics and Engineering, 346, 1051-1073, ISSN 0045-7825, <a href="https://doi.org/10.1016/j.cma.2018.08.007">https://doi.org/10.1016/j.cma.2018.08.007</a>
- [69] Faraonis, P., Sextos, A., Papadimitriou, C., Chatzi, E., Panetsos, P. (2018) Implications of subsoil-foundation stiffness on the dynamic characteristics of a monitored bridge, Structure and Infrastructure Engineering, 15(2), <a href="https://doi.org/10.1080/15732479.2018.1503689">https://doi.org/10.1080/15732479.2018.1503689</a>
- [68] Capellari, G., Chatzi, E., Mariani, S. (2018), Cost-Benefit Optimization of Structural Health Monitoring Sensor Networks, Sensors, 18(7), JulPMC6068495
- [67] Giagopoulos, D., Arailopoulos, A., Dertimanis, V., Papadimitriou, C., Chatzi, E., Grompanopoulos, K. (2018), Structural Health Monitoring and Fatigue Damage Estimation using Vibration Measurements and Finite Element Model Updating, Structural Health Monitoring, <a href="https://doi.org/10.1177/1475921718790188">https://doi.org/10.1177/1475921718790188</a>
- [66] Antonio Palermo, Sebastian Krödel, Kathryn H. Matlack, Rachele Zaccherini, Vasilis K. Dertimanis, Eleni N. Chatzi, Alessandro Marzani, and Chiara Daraio, Hybridization of Guided Surface Acoustic Modes in Unconsolidated Granular Media by a Resonant Metasurface, Physical Review Applied, 9, 054026 Published 17 May 2018, https://doi.org/10.1103/PhysRevApplied.9.054026
- [65] Michels, J., Harmanci, Y.E., and Chatzi, E. (2018). Behaviour of Prestressed CFRP Anchorages During and After Freeze-Thaw Cycle Exposure, Polymers, 10(6), 565, <a href="https://doi.org/10.3390/polym10060565">https://doi.org/10.3390/polym10060565</a>
- [64] Leyder, C., Dertimanis, V., Frangi, A., Chatzi E. & Lombaert, G. (2018) Optimal sensor placement methods and metrics comparison and implementation on a timber frame structure, Structure and Infrastructure Engineering, 14(7), <a href="https://doi.org/10.1080/15732479.2018.1438483">https://doi.org/10.1080/15732479.2018.1438483</a>
- [63] Chatzi E.N., Triantafyllou S.P., Fuggini C. (2018) Numerical and Experimental Investigations of Reinforced Masonry Structures Across Multiple Scales. In: Ottaviano E., Pelliccio A., Gattulli V. (eds) Mechatronics for Cultural Heritage and Civil Engineering. Intelligent Systems, Control and Automation: Science and Engineering, 92, 327-355. Springer, Cham, <a href="https://doi.org/10.1007/978-3-319-68646-2">https://doi.org/10.1007/978-3-319-68646-2</a> 15
- [62] Avendaño Valencia L.D., Chatzi, E.N., Koo, K.W., and Brownjohn, J.M.W. (2017) Gaussian Process time-series models for structures under operational variability, Frontiers in Built Environment, section Structural Sensing, 3(69), <a href="https://doi.org/10.3389/fbuil.2017.00069">https://doi.org/10.3389/fbuil.2017.00069</a>
- [61] Capellari, G., Chatzi, E., Mariani, S. (2018). SHM network-optimization through Bayesian experimental design, ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 4(2), https://doi.org/10.1061/AJRUA6.0000966
- [60] Shokrani, Y., Dertimanis, V.K., Chatzi, E.N., and Savoia, M. (2018). On the use of Mode Shape Curvatures for Damage Localization under Varying Environmental Conditions, Structural Control and Health Monitoring, 25(4), e2132, <a href="https://doi.org/10.1002/stc.2132">https://doi.org/10.1002/stc.2132</a>
- [59] Taeseri, D., Laue, J., Martakis, P., Chatzi, E., and Anastasopoulos, I. (2017). Static and dynamic

- rocking stiffness of shallow footings on sand: centrifuge modelling, Journal of Physical Modelling in Geotechnics, <a href="https://doi.org/10.1680/jphmg.17.00024">https://doi.org/10.1680/jphmg.17.00024</a>
- [58] Martakis, P., Taeseri, D., Chatzi, E., and Laue, J. (2017). A Centrifuge-Based Experimental Verification of Soil-Structure Interaction Effects, Soil Dynamics and Earthquake Engineering, 103, 1-14, ISSN 0267-7261
- [57] Chatzis, M., and Chatzi, E. (2017), A Discontinuous Unscented Kalman Filter for Non-Smooth Dynamic Problems, Frontiers in Built Environment, section Structural Sensing, 19 October 2017, <a href="https://doi.org/10.3389/fbuil.2017.00056">https://doi.org/10.3389/fbuil.2017.00056</a>
- [56] Capellari, G., Chatzi, E., Mariani, S., and Eftekhar Azam, S. (2017), Optimal design of sensor networks for damage detection, Procedia Engineering, Volume 199, 2017, Pages 1864-1869, ISSN 1877-7058, <a href="https://doi.org/10.1016/j.proeng.2017.09.115">https://doi.org/10.1016/j.proeng.2017.09.115</a>
- [55] Bogoevska, S., Spiridonakos, M., Chatzi, E., Dumova-Jovanoska, E. and Höffer, R. (2017). "A Data-Driven Diagnostic Framework for Wind Turbine Structures: A Holistic Approach", Sensors, 17(4):720, <a href="https://doi.org/10.3390/s17040720">https://doi.org/10.3390/s17040720</a>
- [54] Wagner P.R., Dertimanis, V.K., Chatzi, E.N., Beck, J.L. (2018). "Robust-to-Uncertainties Optimal Design of Seismic Metamaterials", ASCE Journal of Engineering Mechanics, 144(3): 04017181, <a href="https://doi.org/10.1061/(ASCE)EM.1943-7889.0001404">https://doi.org/10.1061/(ASCE)EM.1943-7889.0001404</a>
- [53] Egger, A., Chatzi, E.N., and Triantafyllou, S.P. (2017), "An enhanced Scaled Boundary Finite Element Method for Elastic Fracture", Archives of Applied Mechanics, 87: 1667. https://doi.org/10.1007/s00419-017-1280-7
- [52] Agathos, K, Ventura, G., Chatzi, E., Bordas, S. (2018). Stable 3D XFEM/vector-level sets for non-planar 3D crack propagation and comparison of enrichment schemes, Int J Numer Meth Engng, 113:252–276, DOI: 10.1002/nme.5611
- [51] Michels, J., Harmanci, Y.E., Czaderski, C., Loser, R., and Chatzi, E. (2018). Long-Term Residual Anchorage Resistance of Gradient Anchorages for Prestressed CFRP Strips, *Composites Part B. 139*, 171-184, <a href="https://doi.org/10.1016/j.compositesb.2017.11.062">https://doi.org/10.1016/j.compositesb.2017.11.062</a>
- [50] Dertimanis, V., Spiridonakos, M., and Chatzi, E. (2017). Data–Driven Uncertainty Quantification of Structural Systems via B–Spline Expansion, Computers and Structures, *ISSN 0045-7949*, <a href="http://dx.doi.org/10.1016/j.compstruc.2017.03.006">http://dx.doi.org/10.1016/j.compstruc.2017.03.006</a>
- [49] Chatzis, M.N., Chatzi, E.N., and Triantafyllou, S.P. (2017). A Discontinuous Extended Kalman Filter for Non-Smooth Dynamic Problems, Mechanical Systems and Signal Processing, 92, 13-29, ISSN 0888-3270
- [48] Ou, Y., Chatzi, E.N., Dertimanis, V. and Spiridonakos, M. (2016). Vibration-based experimental damage detection of a small-scale wind turbine blade, Structural Health Monitoring, 16(1), 79 96, https://doi.org/10.1177/1475921716663876
- [47] Wagner P.R., Dertimanis, V.K., Antoniadis, I.A., Chatzi, E.N. (2016). On the feasibility of structural metamaterials for seismic-induced vibration mitigation, International Journal of Earthquake and Impact Engineering, 1(1/2), https://doi.org/10.1504/IJEIE.2016.10000957
- [46] Ferrari, R., Pioldi, F., Rizzi, E., Gentile, C., Chatzi, E., Serantoni, E., Wieser, A. (2016). Fusion of wireless and non-contact technologies for the dynamic testing of a historic RC bridge, Measurement Science and Technology, 27, 124014.
- [45] Klis, R., Chatzi, E., Galliot, C., Luchsinger, R., and Feltrin, G. (2016). Modal Identification and Dynamic Response Assessment of a Tensairity Girder, Journal of Structural Engineering, 10.1061/(ASCE)ST.1943-541X.0001637, 04016165
- [44] Mai, C.V., Spiridonakos, M.D., Chatzi, E.N., and Sudret, B. (2016). Surrogate Modeling for Stochastic Dynamical Systems by combining NARX models and Polynomial Chaos Expansions,

- International Journal for Uncertainty Quantification, 6(4) 313-339, https://doi.org/10.1615/Int.J.UncertaintyQuantification.2016016603
- [43] Asgarieh, E., Moaveni, B., Barbosa, A.D., and Chatzi, E. (2016). Nonlinear Model Calibration of a Shear Wall Building using Time and Frequency Data Features, Mechanical Systems and Signal Processing, 85, 236-251.
- [42] Harmanci, Y.E., Spiridonakos, M., Chatzi, E., and Kübler, W. (2016). An autonomous strain-based Structural Monitoring Framework for Life-Cycle Analysis of a Novel Structure, Front. Built Environ. Structural Sensing, <a href="https://doi.org/10.3389/fbuil.2016.00013">https://doi.org/10.3389/fbuil.2016.00013</a>
- [41] Klis, R., and Chatzi, E. (2016). Data recovery via Hybrid Sensor Networks for Vibration Monitoring of Civil Structures, Special Issue on Data Acquisition and Processing, Uncertainty Management and Inverse Problem Techniques for Structural Health Monitoring Applications for the International Journal of Sustainable Materials and Structural Systems, 2(1-2), <a href="https://doi.org/10.1504/IJSMSS.2015.078373">https://doi.org/10.1504/IJSMSS.2015.078373</a>
- [40] Miah, M.S., Chatzi, E., Dertimanis, V., and Weber, F. (2016). Real-time Experimental Validation of a novel Semi-active Control Scheme for Vibration Mitigation, Structural Control and Health Monitoring, 24: e1878, <a href="https://doi.org/10.1002/stc.1878">https://doi.org/10.1002/stc.1878</a>
- [39] Dertimanis, V.K., Antoniadis, I.A., Chatzi, E.N. (2016). "Feasibility analysis on the attenuation of strong ground motions using finite periodic lattices of mass-in-mass barriers", Journal of Engineering Mechanics, 142(9), https://doi.org/10.1061/(ASCE)EM.1943-7889.0001120, 04016060
- [38] Agathos, K., Chatzi, E., and Bordas, S. (2016), "Stable 3D extended finite elements with higher order enrichment for accurate non planar fracture", Computer Methods in Applied Mechanics and Engineering, 306, 19-46.
- [37] Spiridonakos, M., Chatzi, E., and Sudret, B. (2016). "Polynomial Chaos Expansion Models for the Monitoring of Structures under Operational Variability." ASCE-ASME J. Risk Uncertainty Eng. Syst., Part A: Civil Engineering, 2:3, <a href="https://doi.org/10.1061/AJRUA6.0000872">https://doi.org/10.1061/AJRUA6.0000872</a>, B4016003
- [36] Klis, R., and Chatzi, E. (2017). "Vibration Monitoring via Spectro-temporal Compressive Sensing for Wireless Sensor Networks", Structure and Infrastructure Engineering, 13(1), 195-209, https://www.tandfonline.com/doi/abs/10.1080/15732479.2016.1198395?journalCode=nsie20
- [35] Eftekhar-Azam, S., Chatzi, E., and Papadimitriou, C., Smyth, A.W. (2015), "Experimental validation of Kalman-type filters for online and real-time state and input estimation", 23(15), 2494-2519, <a href="https://doi.org/10.1177/1077546315617672">https://doi.org/10.1177/1077546315617672</a>
- [34] Laflamme, S., Cao, L., Chatzi, E., and Ubertini, F., (2016), "Damage Detection and Localization from Dense Network of Strain Sensors", Shock and Vibration, vol. 2016, Article ID 2562949, 13 pages. <a href="https://doi.org/10.1155/2016/2562949">https://doi.org/10.1155/2016/2562949</a>
- [33] Felkner, J, Chatzi, E. and Kotnik, T. (2015), "Interactive Truss Design using Particle Swarm Optimization and NURBS curves", Journal of Building Engineering, Available online 8 August 2015, ISSN 2352-7102, <a href="http://dx.doi.org/10.1016/j.jobe.2015.08.004">http://dx.doi.org/10.1016/j.jobe.2015.08.004</a>
- [32] Miah, M.S., Chatzi, E., Dertimanis, V., and Weber, F. (2015), "Nonlinear Modeling of a Rotational MR Damper via an Enhanced Bouc-Wen Model", Smart Materials and Structures, 24, 105020 (14pp)
- [31] Agathos, K., Chatzi, E., Bordas, P.A., and Talaslidis, D. (2015), "A well-conditioned and optimally convergent XFEM for 3D linear elastic fracture", International Journal for Numerical Methods in Engineering, 105(9), 643–677.
- [30] Escallon, J.P., Von Bötticher, A., Wendeler, C., Chatzi, E., and Bartelt, P. (2015), "Mechanics of chain-link wire nets with loose connections", Engineering Structures, 101, 68-87.

- [29] Spiridonakos, M., and Chatzi, E.N. (2015). "Metamodelling of nonstationary uncertain structural systems based on wavelet transform decomposition", SRESA International journal, Life Cycle Reliability and Safety Engineering, 4(2).
- [28] Spiridonakos, M., and Chatzi, E.N. (2015), "Metamodeling of Dynamic Nonlinear Structural Systems through Polynomial Chaos NARX Models", Computers & Structures, 157, 99-113.
- [27] Schöbi, R., and Chatzi, E.N., "Maintenance Planning using Continuous-State POMDPs and Nonlinear Action Models", Structure and Infrastructure Engineering, 12:8, 977-994, <a href="https://doi.org/10.1080/15732479.2015.1076485">https://doi.org/10.1080/15732479.2015.1076485</a>
- [26] Triantafyllou, S.P., Chatzi, E. (2016), A Hysteretic Multiscale formulation for Validating Computational Models of Heterogeneous Structures, Journal of Strain Analysis for Engineering Design, 51(1), 46-62, https://doi.org/10.1177/0309324715582113
- [25] Miah, M.S., Chatzi, E., and Weber, F., (2015), "Semi-active control for vibration mitigation of structural systems incorporating uncertainties", Smart Materials and Structures, 24(5), 055016.
- [24] Leyder, C., Wanninger, F., Frangi, A., and Chatzi, E. (2015). Dynamic response of an innovative hybrid structure in hardwood, Proceedings of the ICE Construction Materials, 168(3), 132-143.
- [23] Eftekhar-Azam, S.E., Chatzi, E., and Papadimitriou, C. (2015), "A dual Kalman filter approach for state estimation via output-only acceleration measurements", Mechanical Systems and Signal Processing, 60-61, 866-886.
- [22] Bimschas, M., Chatzi, E., and Marti, P., "Inelastic Deformation Analysis of RC Bridge Piers, Part 1: Theory", ACI Structural Journal, 112(3), 267-276.
- [21] M. Bimschas, Chatzi, E., and Marti, P., "Inelastic Deformation Analysis of RC Bridge Piers, Part 2: Application and verification", ACI Structural Journal, 112(3), 277-286.
- [20] Triantafyllou, S.P., and Chatzi E.N. (2014), "Towards a multiscale scheme for nonlinear dynamic analysis of masonry structures with damage", Seismic Assessment, Behavior and Retrofit of Heritage Buildings and Monuments, Computational Methods in Applied Sciences, 37, 165-198.
- [19] Dertimanis, V.K., Chatzi, E.N., and Spiridonakos, M.D. (2014), "Hybrid evolutionary identification of output-error state-space models", Structural Monitoring and Maintenance, 1(4), 427-449.
- [18] Charalampous, E., Psimoulis, P., Guillaume, S., Spiridonakos, M., Klis, R., Bürki, B., Rothacher, M., Chatzi, E., Luchsinger, R., Feltrin, G. (2014), "Measuring sub-mm structural displacements using QDaedalus: a digital clip-on measuring system developed for total stations", Applied Geomatics, 7(2), 91-101.
- [17] Chatzis M.N., Chatzi E.N., and Smyth A.W. (2015), "An experimental validation of time domain system identification methods with fusion of heterogeneous data", Earthquake Engineering and Structural Dynamics, 44(4), 523–547, https://doi.org/10.1002/eqe.2528
- [16] Spiridonakos, M., and Chatzi, E. (2015), "Metamodeling of nonlinear structural systems with parametric uncertainty subject to stochastic dynamic excitation", Special Issue on "Structural Identification and Monitoring with Dynamic Data" in Earthquakes and Structures/ An International Journal for Earthquake Engineering & Earthquake Effects on Structures, 8(4), 915-934.
- [15] Chatzis, M.N., Chatzi, E.N., and Smyth, A.W. (2014), "On the Observability and identifiability methods for structural and mechanical Systems", Structural Control and Health Monitoring, 22(3), 574-593.
- [14] Chatzi, E., and Fuggini, C. (2015), "Online correction of drift in Structural Identification using Artificial White Noise observations and an Unscented Kalman Filter", Special Volume of Smart Structures and Systems on Errors / uncertainties in sensors for Structural Health Monitoring, 16(2), 296-328.

- [13] Bischof, P., Suter, R., Chatzi, E., Lestuzzi, P. (2014), "On the Use of CFRP Sheets for the Seismic Retrofitting of Masonry Walls and the Influence of Mechanical Anchorage", Polymers 2014, 6, 1972-1998,
- [12] Escallon, J.P., Wendeler, C., Chatzi, E., and Bartelt, P. (2014), "Parameter identification of rockfall protection barrier components through an inverse formulation", Engineering Structures, 77, 1-16, ISSN 0141-0296, http://dx.doi.org/10.1016/j.engstruct.2014.07.019
- [11] Triantafyllou, S.P., Chatzi, E.N. (2014), "A hysteretic multiscale formulation for the nonlinear dynamic analysis of composite materials", Computational Mechanics, 54(3), 763-787.
- [10] Chatzi, E. N., and Smyth, A.W. (2014), "Nonlinear System Identification: Particle based methods", In: Beer M., Patelli E., Kougioumtzoglou I., Au I. (Ed.) Encyclopedia of Earthquake Engineering: SpringerReference (www.springerreference.com). Springer-Verlag Berlin Heidelberg.
- [9] Spiridonakos, M., and Chatzi, E., (2014) "Stochastic structural identification from vibrational and environmental data", In: Beer M., Patelli E., Kougioumtzoglou I., Au I. (Ed.) Encyclopedia of Earthquake Engineering: SpringerReference (www.springerreference.com). Springer-Verlag Berlin Heidelberg.
- [8] Miah, M.S., Chatzi, E.N., Weber, F. (2013), "Semi-active control of structural systems with uncertainties using an unscented Kalman filter", Research and Applications in Structural Engineering, Mechanics and Computation, Edited by Alphose Zingoni, CRC Press 2013, pp. 61–66, Print ISBN: 978-1-138-00061-2, eBook ISBN: 978-1-315-85078-8
- [7] Chatzi, E. N. and Smyth, A. W. (2013), Particle filter scheme with mutation for the estimation of time-invariant parameters in structural health monitoring applications. Structural Control and Health Monitoring, 20, 1081–1095. doi: 10.1002/stc.1520
- [6] Fuggini, C., Chatzi, E. and Zangani, D. (2013), "Combining Genetic Algorithms with a Meso-Scale Approach for System Identification of a Smart Polymeric Textile", Computer-Aided Civil and Infrastructure Engineering, 28(3), 227–245, <a href="https://doi.org/10.1111/j.1467-8667.2012.00789.x">https://doi.org/10.1111/j.1467-8667.2012.00789.x</a>
- [5] Chatzi, E.N., Hiriyur, B.K., Waisman, H., and Smyth, A.W., (2011), "Experimental application and enhancement of the XFEM-GA algorithm for the detection of flaws in structures", Computers & Structures, 89(7-8), 556-570.
- [4] Kotsidas, P., Chatzi, E., and Modi, V. (2010), "Stationary, nonimaging lenses for solar concentration", Journal of Applied Optics, 49(27), pp. 5183-5191.
- [3] Chatzi, E.N., Smyth, A.W., and Masri, S.F. (2010), "Experimental application of on-line parametric identification for nonlinear hysteretic systems with model uncertainty", Journal of Structural Safety, Structural Safety, 32(5), 326-337.
- [2] Waisman, H., Chatzi, E., and Smyth, A.W. (2010), "Detection and Quantification of Flaws in Structures by the Extended Finite Element Method and Genetic Algorithms", International Journal for Numerical Methods in Engineering, 82(3), 303–328.
- [1] Chatzi, E., and Smyth, A.W. (2009), "The unscented Kalman filter and particle filter methods for nonlinear structural system identification with non-collocated heterogeneous sensing", Structural Control and Health Monitoring, 16(1), 99-123.

**BOOKS** 

- [3] Matos, Jose C., Casas, Joan R., Chatzi, Eleni, Høj, Niels P., Strauss, Alfred, Stipanovic, Irina and Hajdin, Rade. "COST Action TU1406. eBook of the 1st Workshop Meeting", Geneva, September 21st-22nd 2015. ETH-Zürich (2015), <a href="http://dx.doi.org/10.3929/ethz-a-010578903">http://dx.doi.org/10.3929/ethz-a-010578903</a>
- [2] "Identification Methods for Structural Health Monitoring", Course Volume, International Centre for Mechanical Sciences (CISM), Springer., edited by Eleni Chatzi and Costas Papadimitriou, 2016.

[1] Chatzi, E., "Development and application of parametric system identification algorithms for structural health monitoring", PhD Thesis, Columbia University, 2010.

#### **FACTSHEETS**

- [4] Chatzi, E., and Papakonstantinou, K. (2017), A Partially Observable Markov Decision approach to decision-making, Factsheet of COST TU1402: Quantifying the Value of Structural Health Monitoring.
- [3] Straub, D., and Chatzi, E. (2016), Framework for SHM Value of Information Analysis and Computation, Factsheet of COST TU1402: Quantifying the Value of Structural Health Monitoring.
- [2] Reynders, E., Chatzi, E., Döhler, M., and Lombaert, G. (2015), Monitoring the structural health of the Z24 Bridge, Factsheet of COST TU1402: Quantifying the Value of Structural Health Monitoring.
- [1] Limongelli, M.P., Chatzi, E., Döhler, M., and Lombaert, G. (2015), Towards Extraction of Vibration-based Damage Indicators, Factsheet of COST TU1402: Quantifying the Value of Structural Health Monitoring.

#### **BOOKS IN PREPARATION**

[1] Eleni Chatzi, Minas Spiridonakos and Vasilis Dertimanis, "Identification Methods for Structural Health Monitoring and Residual Lifecycle Assessment", CRC Press and Spoon Press (imprints of Taylor & Francis).

#### **CONFERENCE PROCEEDINGS**

- [164] Thomas E. Simpson, Nikolaos Dervilis, and Eleni Chatzi, On the use of Nonlinear Normal Modes for Nonlinear Reduced Order Modelling, Eurodyn 2020, XI International Conference on Structural Dynamics, M. Papadrakakis, M. Fragiadakis, C. Papadimitriou (eds.), Athens, Greece, 22—24 June 2020.
- [163] C. A. Hoelzl, L. Avendaño-Valencia, V. Dertimanis, E. Chatzi, M. Zurkirchen, Axle Box Accelerometer Signal Identification and Modelling #8030, IMAC XXXVIII Conference, The Society of Experimental Mechanics, February 2020, Houston, Texas
- [162] S. Vettori, E. Di Lorenzo, R. Cumbo, U. Musella, T. Tamarozzi, B. Peeter, E. Chatzi, Kalman-based Virtual Sensing for Improvement of Service Responses Replication in Environmental Tests #8071, IMAC XXXVIII Conference, The Society of Experimental Mechanics, February 2020, Houston, Texas
- [161] T. Simpson; K. Tatsis, V. Dertimanis, D. Giagopoulos, On Dynamic Substructuring of Systems with Localised Nonlinearities #8052, IMAC XXXVIII Conference, The Society of Experimental Mechanics, February 2020, Houston, Texas
- [160] K. E. Tatsis, V. K. Dertimanis, E. N. Chatzi, Adaptive Process and Measurement Noise, Identification for Recursive Bayesian Estimation, IMAC XXXVIII Conference, The Society of Experimental Mechanics, February 2020, Houston, Texas
- [159] C. Mylonas, I. Abdallah, D. Vieira, K. Moisi, M. Zientek, and E. Chatzi, Data-Driven Remaining Useful Life Prediction for Anchor Fatigue, IMAC XXXVIII Conference, The Society of Experimental Mechanics, February 2020, Houston, Texas
- [158] Martakis, P., Reuland, Y., Dertimanis, V., and Chatzi, E., Vibration Monitoring Of An Existing Masonry Building Under Demolition, IABSE Symposium Synergy of Culture and Civil Engineering History and Challenges, May 20-22, 2020, Wrocław University of Science and Technology.
- [157] Y. E. Harmanci, K. Agathos, G. Jacot-Descombes, E. Chatzi, Test-independent identification of fracture parameters of plain concrete based on a cohesive XFEM formulation, 10th International

- Conference on Fracture Mechanics of Concrete and Concrete Structures FraMCoS-X, G. Pijaudier-Cabot, P. Grassl and C. La Borderie (Eds), <a href="https://framcos.org/FraMCoS-10/Full-Papers/235610.pdf">https://framcos.org/FraMCoS-10/Full-Papers/235610.pdf</a>
- [156] Egger, A., Triantafyllou, S., and Chatzi, E., A Scaled Boundary Multiscale Approach to Crack Propagation, 10th International Conference on Fracture Mechanics of Concrete and Concrete Structures FraMCoS-X, G. Pijaudier-Cabot, P. Grassl and C. La Borderie (Eds), <a href="https://framcos.org/FraMCoS-10/Full-Papers/233540.pdf">https://framcos.org/FraMCoS-10/Full-Papers/233540.pdf</a>
- [155] Martín-Sanz, Henar, Tatsis, Konstantinos, Damjanovic, Domagoj, Sajna, Aljosa, Stipanovic, Irina, Bohinc, Uros, Brühwiler, Eugen, Chatzi, Eleni, Vibration-based Damage Identification in the UHPFRC Strengthened Buna bridge, ANCRISST 2019 14th International Workshop on Advanced Smart Materials and Smart Structures Technology, Rome, Italy, July 18-21,2019
- [154] Ravizza, G., Ferrari, R., Rizzi, E., Dertimanis, V., and Chatzi, E.N., Denoising Corrupted Structural Vibration Response: Critical Comparison and Assessment Of Related Methods, 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2019, 24-26 June 2019, Crete, Greece.
- [153] Tatsis, K., Dertimanis, V., and Chatzi, E., Response Prediction of Systems Featuring Operational and Environmental Variability, 3rd International Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2019, 24-26 June 2019, Crete, Greece.
- [152] Martakis, P., Dertimanis, V., and Chatzi, E., On the Use of Meta-Foundations For Seismic Isolation: A Practical Application For Conventional Buildings, 7th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2019, 24-26 June 2019, Crete, Greece.
- [151] Simona Bogoevska, Eleni Chatzi, Elena Dumova-Jovanoska, Rüdiger Höffer, Data-Driven Structural Health Monitoring and Diagnosis of Operating Wind Turbines, 18th International Symposium of Macedonian Association of Structural Engineers (MASE 2019), 2<sup>nd</sup> 5<sup>th</sup> October 2019, Ohrid, Republic of North Macedonia
- [150] Ersilia Giordano, Francesco Clementi, Alberto Barontini, Maria-Giovanna Masciotta, Eleni Chatzi, Luis F. Ramos, Paulo Amado-Mendes, Damage detection and optimal sensor placement in health monitoring of "Collegiata di Santa Maria" in Visso (Central Italy), ANIDIS 2019 - XVIII Convegno, Ascoli Piceno, 15 -19 Sept.
- [149] Simpson, T., Dertimanis, V. Papadimitirou, C., and Chatzi, E., On the Potential of Dynamic Substructuring Methods for Model Updating, Proceedings of the 12th International Workshop on Structural Health Monitoring, September 10-12, 2019, Stanford, California, USA
- [148] Egger, A., Triantafyllou S., Chatzi, E., Improving the Accuracy of Stress Intensity Factors Obtained by the Scaled Boundary Finite Element Method on Hierarchical Meshes, the 10th International Conference on Computational Methods (ICCM2019), July 9, 2019 July 13, 2019
- [147] Egger, A., Saputra, A., Triantafyllou S., Chatzi, E., Exploring Topology Optimization on Hierarchical Meshes by Scaled Boundary Finite Element Method, the 10th International Conference on Computational Methods (ICCM2019), July 9, 2019 July 13, 2019
- [146] K. Tatsis and E. Chatzi, A numerical benchmark for system identification under operational and environmental variability, 8th International Operational Modal Analysis Conference (IOMAC 2019), May 12th – 14th 2019, Copenhagen
- [145] Dervilis, N., Zhang, T., Bull, L. et al. (7 more authors) (2019) A nonlinear robust outlier detection approach for SHM. In: Amador, S.D.R., Brincker, R., Katsanos, E.I., Aenlle, M.L. and Fernández, P., (eds.) Proceedings of 8th International Operational Modal Analysis Conference (IOMAC 2019). 8th International Operational Modal Analysis Conference (IOMAC 2019), 13-15 May 2019, Copenhagen, Denmark, pp. 107-114. ISBN 9781510888333

- [144] K. Tatsis, L. Wu, P. Tiso & E. Chatzi, Output-Only state estimation of geometrically non-linear systems using reduced-order models, Student paper Competition of the Structural Health Monitoring and Control Committee, EMI 2018 conference, May 29-June 1st 2018, MIT Campus, USA
- [143] Mylonas C., Abdallah I., Chatzi E.N. (2020) Deep Unsupervised Learning for Condition Monitoring and Prediction of High Dimensional Data with Application on Windfarm SCADA Data. In: Barthorpe R. (eds) Model Validation and Uncertainty Quantification, Volume 3. Conference Proceedings of the Society for Experimental Mechanics Series. Springer, Cham, 2019, https://doi.org/10.1007/978-3-030-12075-7 21
- [142] Dertimanis V.K., Zimmermann M., Corman F., Chatzi E.N. (2020) On-Board Monitoring of Rail Roughness via Axle Box Accelerations of Revenue Trains with Uncertain Dynamics. In: Barthorpe R. (eds) Model Validation and Uncertainty Quantification, Volume 3. Conference Proceedings of the Society for Experimental Mechanics Series. Springer, Cham, https://doi.org/10.1007/978-3-030-12075-7 18
- [141] Avendaño-Valencia, L.D., Tatsis, K., and Chatzi, E., Gaussian Process Vector AR surrogates for identification of structures under varying operational conditions, Proceedings of 8th Conference on Computational Stochastic Mechanics (CSM8), June 10-13, 2018
- [140] Avendaño-Valencia, L.D., Abdallah, I., and Chatzi, E., On the differences in the dynamic response of up-wind and waked wind turbines: Analysis via surrogate Gaussian Process time-series models, Proceedings of the joint ICVRAM ISUMA UNCERTAINTIES conference, Florianopolis, SC, Brazil, April 8-11, 2018
- [139] Papakonstantinou K.G., Andriotis C.P., Gao, H. and Chatzi, E.N., Quantifying the value of structural monitoring for decision making 13th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP13, Seoul, South Korea, May 26-30, 2019
- [138] K. Tatsis, L. Wu, P. Tiso & E. Chatzi, State estimation of geometrically non-linear systems using reduced-order models, Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2018), October 28-31 2018, Ghent, Belgium.
- [137] H. Martín-Sanz, K. Tatsis, E. Chatzi, E. Brühwiler, I. Stipanovic, A. Mandic, D. Damjanovic & A. Sanja, Towards the use of UHPFRC in railway bridges: the rehabilitation of Buna Bridge, Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2018), October 28-31 2018, Ghent, Belgium.
- [136] Harmanci, Y., Lai, Z., Gülan, U., Holzner, M., Chatzi, E. (2019) Computer Vision Aided Structural Identification: Feature Tracking Using Particle Tracking Velocimetry versus Optical Flow, Proceedings of 5th International Electronic Conference on Sensors and Applications, 1 (doi: 10.3390/ecsa-5-05750)
- [135] Koumoutsakos, P., Chatzi, E., Krzhizhanovskaya, V.V., Lees, M., Dongarra, J., Sloot, P.M.A. The Art of Computational Science, Bridging Gaps – Forming Alloys. Preface for ICCS 2017, Procedia Computer Science, Volume 108, 2017, Pages 1-6, ISSN 1877-0509, https://doi.org/10.1016/j.procs.2017.05.281
- [134] Dertimanis, V. and Chatzi E. LQR-UKF Active Comfort Control of Passenger Vehicles with Uncertain Dynamics, 18th IFAC Symposium on System Identification (SYSID 2018)At: Stockholm, Sweden, July 2018.
- [133] Harmanci, Y.E., Gülan, Ü., Holzner, M., Chatzi, E. A comparative study on 2D and 3D tracking of vibration via motion magnified high-speed videos, Proceedings of the 7th World Conference on Structural Control and Monitoring, July 22-25, 2018, Qingdao, China.
- [133] K. Tatsis, V. Dertimanis, E. Chatzi, On damage localization in wind turbine blades: a critical comparison and assessment of modal-based criteria, Proceedings of the 7th World Conference on

- Structural Control and Monitoring, July 22-25, 2018, Qingdao, China.
- [132] K Tatsis, V Dertimanis and E Chatzi, Modal-based damage localisation on wind turbine blades under environmental variability, 9th European Workshop On Structural Health Monitoring (EWSHM 2018), 10-13 July 2018, Manchester, UK.
- [131] Bogoevska, S., Chatzi, E., Jovanoska, E., Höffer, R., "A Data-driven Diagnostic Tool for Wind Turbines Under Operational Variability", 9th International Conference on Computational Methods (ICCM2018), Rome, Italy, August 6-10, 2018.
- [130] Mohamadreza Afrasiabi, Matthias Roethlin, Eleni Chatzi and Konrad Wegener, A robust particle—based solver for modeling heat transfer in multiphase flows, 6th European Conference on Computational Mechanics (Solids, Structures, and Coupled Problems)
- [129] I. Abdallah, E. Chatzi, An ensemble learning approach to aggregate the output, from multiple simulators and measurements, 19th working conference of the IFIP Working Group 7.5 on Reliability and Optimization of Structural Systems (IFIP 2018), ETH Zurich (Switzerland), June 26-29, 2018.
- [128] I. Abdallah, V. Dertimanis, H. Mylonas, K. Tatsis, E. Chatzi, N. Dervilis, K. Worden & E. Maguire, Fault Diagnosis of wind turbine structures using decision tree learning algorithms with big data, European Safety and reliability Conference, ESREL 2018, Trondheim, Norway, 17-21 June 2018.
- [127] Eleni Chatzi, Konstantinos G. Papakonstantinou, Rade Hajdin, Daniel Straub, Observation-based Decision-making for Infrastructure, The Value of Structural Health Monitoring for the reliable Bridge Management, Zagreb 2-3 March 2017, https://doi.org/10.5592/CO/BSHM2017.4.1
- [126] Zaccherini, R., Dertimanis, V.K., Palermo, A., Krödel, S., Marzani, A., Daraio, C., E.N. Chatzi. Resonant Metabarriers as Seismic Attenuators in Granular Media ", ISMA2018 conference on Noise and Vibration Engineering, Leuven, 17-19 September 2018.
- [125] Noppe, N., Tatsis, K., Chatzi, E., Devriendt, C., Weijtjens, W. (2018). "Fatigue stress estimation of offshore wind turbine using a Kalman filter in combination with 1s SCADA data and accelerometers", ISMA2018 conference on Noise and Vibration Engineering, Leuven, 17-19 September 2018.
- [124] Abdallah, I., Chatzi, E., and Barahona, B. (2017). "An integrated approach for smart monitoring, inspection and life-cycle assessment of wind turbines," Proceedings International Conference on Wind Energy Harvesting, WINERCOST, Coimbra, Portugal.
- [123] Mylonas, C., Abdallah, I., and Chatzi, E. (2017), "Surrogate Modelling For Fatigue Damage of Wind-Turbine Blades Using Polynomial Chaos Expansions and Non-Negative Matrix Factorization", 39th IABSE Symposium – Engineering the Future, September 21-23 2017, Vancouver, Canada
- [122] Mylonas, C., Bemetz, V., Chatzi, E. (2017). Multiscale Surrogate Modeling and Uncertainty Quantification for Periodic Composite Structures, 2nd ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2017, Rhodes Island, Greece, 15–17 June 2017.
- [121] Abdallah, I., and Chatzi, E. (2017). "An ensemble learning approach to aggregate the output from multiple simulators and measurements", IFIP WG7.5 Conference on Reliability and Optimization of Structural Systems, May 14-16 2018, Zurich Switzerland
- [120] Barahona, B., Hoelzl, C., and Chatzi, E. (2017). "Applying Design Knowledge and Machine Learning to SCADA data for Classification of Wind Turbine Operating Regimes", 2017 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2017), Honolulu, Hawaii, USA, November 2017.
- [119] Chatzi, E. (2017), "A Monitoring Approach to Smart Infrastructure Management", Proceedings 2017, 1(8), 755, doi:10.3390/proceedings1080755.
- [118] Capellari, G., Chatzi, E., Stefano M. (2017), Cost-benefit optimization of sensor networks for SHM applications, Conference: 4th International Electronic Conference on Sensors and Application, 15-30 November 2017, online

- [117] Harmanci, Y.E., Michels, J., and Chatzi, E, "Behaviour of Prestressed CFRP Anchorages under Freeze-Tha", 4th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR 2017, September 13-15 2017, Zurich, Switzerland.
- [116] Harmanci, Y.E., Gülan, U., Zimmermann, M., Chatzi, E., and Holzner, M., "High Spatial Density Vibrational Measurements via 3D-Particle Tracking Velocimetry", 4th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR 2017, September 13-15 2017, Zurich, Switzerland.
- [115] Luis David Avendaño-Valencia, Braulio Barahona, Cyprien Hoelzl, and Eleni N. Chatzi, "Operational Regime Clustering for the Construction of PCE-Based Surrogates of Operational Wind Turbines", 7AESE Conference, 6-8 September 2017, Pavia, Italy
- [114] C. Leyder, E. Chatzi, and A. Frangi, "Vibration-based model updating of a timber frame structure", EURODYN 2017, September 10-13 2017, Rome, Italy.
- [113] M. Chatzis, and E. Chatzi, "Online Bayesian Identification of Non-Smooth Systems", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [112] I.Abdallah, E.Chatzi, and K.Tatsis, "Fatigue assessment of a wind turbine blade when output from multiple aero-elastic simulators are available", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [111] L.D. Avendaño Valencia, and E. Chatzi, "Sensitivity driven robust vibration-based damage diagnosis under uncertainty through hierarchical Bayes time-series representations", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [110] G. Capellari, E. Chatzi, S. Mariani, S.Eftekhar-Azam, "Optimal design of sensor networks for damage detection", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [109] Chatzis, M, and Chatzi, E. "A Discontinuous "D" Variant for Identification of non-smooth systems", ICOSSAR 2017 12th International Conference on Structural Safety & Reliability, 6-10 August 2017, Vienna, Austria.
- [108] D. Straub, E. Chatzi, E. Bismut, W.M.G. Courage, M. Döhler, M.H. Faber, J. Köhler, G. Lombaert, P. Omenzetter, M. Pozzi, S. Thöns, D. Val, D. Zonta, "Value of Information: A roadmap to quantifying the benefit of structural health monitoring", ICOSSAR 2017 12th International Conference on Structural Safety & Reliability, 6-10 August 2017, Vienna, Austria.
- [107] Gkoktsi, K., Dertimanis, V., Chatzi, E. and Giaralis, A., "Vibration-based structural performance assessment via output only sub-Nyquist/ compressive wireless sensor data", 4th International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR 2017, September 13-15 2017, Zurich, Switzerland.
- [106] Giagopoulos, D., Arailopoulos, A., Dertimanis, V., Papadimitriou, C., Chatzi, E. and Grompanopoulos, K., "Computational Framework for Online Estimation of Fatigue Damage using Vibration Measurements from a Limited Number of Sensors", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [105] Tatsis, K., Dertimanis, V., Abdallah, I. and Chatzi, E., "A substructure approach for fatigue assessment on wind turbine support structures using output-only measurements", X International Conference on Structural Dynamics, EURODYN 2017, September 10-13 2017, Rome, Italy.
- [104] Ou, Y. Harmanci, Y.E., Chen, Q. De Soto, B.G., Dertimanis, V. and Chatzi, E., "A finite element analysis approach to improve interoperability for thermal energy simulations", 9th International Structural Engineering and Construction Conference, ISEC-9, July 24-29 2017, Valencia, Spain.
- [103] Ou, Y., Dertimanis, V.K. and Chatzi, E., Operational damage localization of wind turbine blades, EVACES 2017, July 12-14 2017, San Diego, USA.

- [102] Abdallah, I., Dertimanis, V. and Chatzi, E., "Data-driven identification, classification and update of decision tress for monitoring and diagnostics of wind turbines", 2nd ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2017, Rhodes Island, Greece, 15–17 June 2017.
- [101] Tsotalou, M., Giagopoulos, D., Dertimanis, V. and Chatzi, E., Model updating of a nonlinear experimental vehicle using substructuring and unscented Kalman filtering, 2nd ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2017, Rhodes Island, Greece, 15–17 June 2017.
- [100] Tatsis, K., Chatzi, E., and Lourens, E.M., Reliability prediction of fatigue damage accumulation on wind turbine support structures, 2nd ECCOMAS Thematic Conference on Uncertainty Quantification in Computational Sciences and Engineering, UNCECOMP 2017, Rhodes Island, Greece, 15–17 June 2017.
- [99] Barahona, B., Chatzi, E. N., Wake Effects When Estimating Residual Life of Wind Turbine Support Structures, IMAC XXXVI Conference, The Society of Experimental Mechanics, Orange County, California, January, 2017.
- [98] Avendaño-Valencia, L.D., Chatzi, E.N, Fassois, S.D., "In-OperationWind Turbine Modal Analysis via LPV-VAR Modeling", IMAC-XXXVI, A Conference and Exposition on Structural Dynamics, 30 January-February 2, 2017, Orange County, CA, United States.
- [97] G. Capellari, E. Chatzi, and S. Mariani, "Optimal sensor placement through Bayesian experimental design: effect of measurement error and number of sensors", Conference: 3rd International Electronic Conference on Sensors and Applications, 15-30 November 2016, online.
- [96] Bogoevska, S., Spiridonakos, M., Chatzi, E., Jovanoska, E.R., Höffer, R., "A data-driven framework for comprehensive identification of operational Wind Turbines under uncertainty", International Conference on Uncertainty in Structural Dynamics, 19-21 September 2016, KU Leuven, Belgium
- [95] Ou, Y., Dertimanis, V., and Chatzi, E., "Experimental Damage Detection of a Wind Turbine blade under varying Operational Conditions", International Conference on Uncertainty in Structural Dynamics, 19-21 Spetember 2016, KU Leuven, Belgium
- [94] Chatzis, M. N., Chatzi, E.N. and Triantafyllou, S.P. "Identification of non-smooth dynamics for assessing structural performance", 11th HSTAM International Congress on Mechanics, Athens, 27 30 May, 2016, Greece
- [93] Zimmermann, M., Gülan, U., Harmanci, Y.E., Chatzi, E., and Holzner, M., "Structural Health Monitoring through Video Recording", 8th European Workshop On Structural Health Monitoring (EWSHM 2016), 5-8 July 2016, Spain, Bilbao
- [92] Giagopoulos, D., Arailopoulos, A., Eftekhar Azam, S., Papadimitriou, C., Chatzi, E., Grompanopoulos, K., "Dynamic Response Estimation and Fatigue Prediction in a Linear Substructure of a Complex Mechanical Assembly", 8th European Workshop On Structural Health Monitoring (EWSHM 2016), 5-8 July 2016, Spain, Bilbao
- [91] Dertimanis, V.K., Eftekhar Azam, S., Chatzi, E., Papadimitriou, C., "Output-only fatigue prediction of uncertain steel structures", 8th European Workshop On Structural Health Monitoring (EWSHM 2016), 5-8 July 2016, Spain, Bilbao
- [90] Limongelli, M.P., Chatzi, E., Döhler, M., Lombaert, G., Reynders, Edwin, "Towards extraction of vibration-based damage indicators", 8th European Workshop On Structural Health Monitoring (EWSHM 2016), 5-8 July 2016, Spain, Bilbao
- [89] Bogoevska, S., Spyridonakos, M., Chatzi, E., Dumova-Jovanoska, E., Höffer, R. "A novel bicomponent Structural Health Monitoring strategy for deriving global models of operational Wind

- Turbines", 8th European Workshop On Structural Health Monitoring (EWSHM 2016), 5-8 July 2016, Spain, Bilbao
- [88] Chatzis, M., Chatzi, E., and Triantafyllou, S., "A Discontinuous class of filtering methods for the identification of non-smooth dynamical systems", Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2016), October 16-19 2016, Delft The Netherlands.
- [87] Leyder, C., Chatzi, E., Lombaert, G., and Frangi, A., "Comparison of optimal sensor placement algorithms via the implementation on an innovative timber structure", Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2016), October 16-19 2016, Delft The Netherlands.
- [86] Ou, Y., Dertimanis, V., and Chatzi, E., "Wind Turbine Blade Damage Detection and Localization via Spatiotemporal Kalman Filtering", Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2016), October 16-19 2016, Delft The Netherlands.
- [85] Klis, R., Chatzi, E., and Dertimanis, V., "Experimental Validation of Spectro-Temporal Compressive Sensing for Vibration Monitoring using Wireless Sensor Networks", Proceedings of the 5th International Symposium on Life-Cycle Civil Engineering (IALCCE 2016), October 16-19 2016, Delft The Netherlands.
- [84] Martin-Sanz, H., Chatzi, E., Brühwiler, E., "Sustainable strengthening of structures using Ultra High Performance Fibre Reinforced Cement-Based Composites and Computational Verification", 19th IABSE Congress Stockholm, 21-23 September 2016, Challenges in Design and Construction of an Innovative and Sustainable Built Environment.
- [83] Leyder, C., Frangi, A., and Chatzi, E., "Modal vibration testing of an innovative timber structure", World Conference on Timber Engineering (WCTE 2016), Vienna, Austria, August 22-25, 2016.
- [82] Klis, R., Chatzi, E., Spiridonakos, M., "Structural Monitoring Framework relying on Wireless Sensors Networks and Spectro-Temporal Compressive Sensing", Proceedings of the 8th International Conference on. Bridge Maintenance, Safety and Management (IABMAS 2016), June 26 30, 2016.
- [81] Dertimanis, V., and Chatzi, E., "LQR-UKF semi-active control of (partially) uncertain structures", 6<sup>th</sup> EACS European Conference, University of Sheffield, 11-13 July, 2016
- [80] Antoniadis I.A., Sapountzakis, I.E., and Chatzi, E.N, "A KDamping concept for seismic excitation absorption", 1st International Conference on Natural Hazards and Infrastructure: Protection, Design, Rehabilitation, Chania, Greece, June 28-30, 2016.
- [79] Egger, A., Triantafyllou, S., and Chatzi, E., "The Scaled Boundary Finite Element Method for the efficient Modeling of Linear Elastic Fracture", 9th International Conference on Fracture of Concrete and Concrete Structures (FraMCoS-9), Berkeley, California, USA, May 29-June 1, 2016.
- [78] Martin-Sanz, H., Chatzi, E., Brühwiler, E., "The use of Ultra-High Performance Fiber Reinforced Cement-based Composites in Rehabilitation Projects: A review", 9th International Conference on Fracture of Concrete and Concrete Structures (FraMCoS-9), Berkeley, California, USA, May 29-June 1, 2016.
- [77] Agathos, K., Chatzi, E., Bordas, S., "3D Crack Detection Using an XFEM Variant and Global Optimization Algorithms", 9th International Conference on Fracture of Concrete and Concrete Structures (FraMCoS-9), Berkeley, California, USA, May 29-June 1, 2016.
- [76] Kocur, G., Chatzi, E., Häusler, F., "Numerical study on the structural behavior of serrated cast-in anchor channels subjected to longitudinal loading close to the edge", 9th International Conference on Fracture of Concrete and Concrete Structures (FraMCoS-9), Berkeley, California, USA, May 29-June 1, 2016.
- [75] Dertimanis, V., Giagopoulos, D., and Chatzi, E., "Finite Element Metamodeling of Uncertain Structures", European Congress on Computational Methods in Applied Sciences and Engineering,

- ECCOMAS Congress 2016, 5 10 June 2016, Crete Island, Greece
- [74] Capellari, G., Chatzi, E., and Mariani, S., "An optimal sensor placement method for SHM based on Bayesian Experimental Design and Polynomial Chaos Expansion", European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS Congress 2016, 5 10 June 2016, Crete Island, Greece
- [73] Agathos, K., Ventura, G., Chatzi, E., and Bordas, S., "Well Conditioned and Optimally Convergent Extended Finite Elements and Vector Level Sets for Three-Dimensional Crack Propagation", European Congress on Computational Methods in Applied Sciences and Engineering, ECCOMAS Congress 2016, 5 10 JUNE 2016, Crete Island, Greece
- [72] Shokrani, Y., Dertimanis, V.K., Chatzi, E.N., and Savoia, M., "Structural Damage Localization under Varying Environmental Conditions", 11th HSTAM International Congress on Mechanics, Athens, 27 30 May, 2016, Greece
- [71] Martakis, P., Taeseri, D., Chatzi, E., and Laue, J., A., "Centrifuge-based Experimental and Analytical Study of the Soil and Structure Interaction Effect", 11th HSTAM International Congress on Mechanics, Athens, 27 30 May, 2016, Greece
- [70] Capellari, G., Chatzi, E., and Mariani, S., "Sensor Placement for Structural Health Monitoring: an Optimal Bayesian Experimental Design Approach", Engineering Mechanics Institute Conference 2016 (EMI 2016) and the Probabilistic Mechanics & Reliability Conference 2016 (PMC 2016), Vanderbilt University, Nashville, USA
- [69] Svetozarevic, B., Nagy, Z., Hofer, J., Jacob, D., Begle, M., Chatzi, E., Schlueter, A., "SoRo-Track: A Two-Axis Soft Robotic Platform for Solar Tracking and Building-Integrated Photovoltaic Applications", 2016 IEEE International Conference on Robotics and Automation, May 16-21, 2016, Stockholm, Sweden
- [68] Dertimanis, V.K., Chatzi, E.N., Eftekhar Azam, S., and Papadimitriou, C., "Fatigue assessment in steel railway bridges using output only vibration measurements and partial structural information", 3rd International Conference on Railway Technology: Research, Development and Maintenance, Cagliari, Sardinia, Italy 5-8 April 2016.
- [67] Giagopoulos, D., Dertimanis, V., Chatzi, E., Spiridonakos, M., "Online state and parameter estimation of a nonlinear gear transmission system", IMAC-XXXIV, A Conference and Exposition on Structural Dynamics, 25-28 January 2016, Orlando, United States.
- [66] Wagner, P.R., Dertimanis, V., Chatzi, E., Antoniadis, I., "Design of metamaterials for seismic isolation", IMAC-XXXIV, A Conference and Exposition on Structural Dynamics, 25-28 January 2016, Orlando, United States.
- [65] Leyder, C. Chatzi, E. and Frangi, A. "Structural Health Monitoring of an Innovative Timber Building", Second International Conference on Performance-based and Life-cycle Structural Engineering Conference (PLSE2015), Brisbane, 9 11 December 2015.
- [64] Chatzi, E., and Spiridonakos, M., "Structural Identification and Modeling based on Uncertain/Limited Information, Experimental Vibration Analysis of Civil Engineering Structures", EVACES 2015, Empa Dübendorf, Switzerland, October, 19-21, 2015
- [63] Harmanci, Y.E., Spiridonakos, M., Chatzi, E., and Kübler, W., "Monitoring of a Novel Structure using Fiber Bragg Grating Strain Sensors", The Third Conference on Smart Monitoring, Assessment and Rehabilitation of Structures, SMAR 2015 Antalya, Turkey, 7-9 September 2015.
- [62] Bischof, P., Chatzi, E., Suter, R., and Lestuzzi, P. (2015), "Numerical and analytical investigation on bonding of CFRP sheets on steel", Proceedings of the third Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR2015, Antalya, Turkey, 7-9 September 2015.

- [61] Eftekhar-Azam, S., Chatzi, E., and Papadimitriou, C., "Online fatigue damage prediction for metallic structures via output only vibration measurements", International Workshop on Structural Health Monitoring 2015, Stanford, CA, USA, September 1-3, 2015.
- [60] Avendaño-Valencia, L.D., and Chatzi, E.N. "Non-stationary random coefficient models for vibration-based SHM in structures influenced by strong operational and environmental variability", International Workshop on Structural Health Monitoring 2015, Stanford, CA, USA, September 1-3, 2015.
- [59] Ou, Y., Grauvogl, B., Spiridonakos, M., Dertimanis, V., Chatzi, E., and Vidal, J. "Vibration-based damage detection and localization on a blade of a small scale wind turbine", International Workshop on Structural Health Monitoring 2015, Stanford, CA, USA, September 1-3, 2015.
- [58] Avendaño-Valencia, L.D., Chatzi, E.N., and Spiridonakos, M.D. "Surrogate modeling of nonstationary systems with uncertain properties", ESREL 2015, The annual European Safety and Reliability Conference ESREL, 7-10 September, Zurich, 2015.
- [57] Chatzi, E., and Spiridonakos, M., "Incorporating Uncertainty in Vibration-based Monitoring and Simulation", Fourth International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering (CIVIL-SOFT-COMP 2015), Prague, Czech Republic, 1-4 September 2015
- [56] Spiridonakos, M.D., Dertimanis, V.K. and Chatzi, E.N. "Estimation of Data-Driven Polynomial Chaos using hybrid Evolution Strategies", CIVIL-SOFT-COMP 2015, The Fourth International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering, Prague, Czech Republic, 1-4 September 2015.
- [55] Spiridonakos, M, Giagopoulos, D., Chatzi, E., and Dertimanis, V. "Finite Element Metamodeling for Nonlinear Systems with Uncertain Properties", EMI 2015 - Engineering Mechanics Institute Conference - Stanford University, June 16-19, 2015.
- [54] Spiridonakos, M.D, and Chatzi, E.N. "Data-Driven Polynomial Chaos Basis Estimation", 12th International Conference on Applications of Statistics and Probability in Civil Engineering, ICASP12, Vancouver, Canada, July 12-15, 2015.
- [53] Klis, R., and Chatzi, E., "Structural damage detection using hybrid tethered-wireless sensor networks", Proceedings of the 7th International conference on Structural Health Monitoring of Intelligent Infrastructure (SHM-II), Torino, Italy, 1-3 July 2015.
- [52] Chatzi, E., and Spiridonakos, M., "Dealing with Uncertainty in the Monitoring and Simulation of Dynamically Evolving Systems", Proceedings of the 7th International conference on Structural Health Monitoring of Intelligent Infrastructure (SHM-II), Torino, Italy, 1-3 July 2015.
- [51] Spiridonakos, M., Ou, Y., Chatzi, E., and Romberg, M., "Wind turbines structural identification framework for the representation of both short- and long-term variability", Proceedings of the 7th International conference on Structural Health Monitoring of Intelligent Infrastructure (SHM-II), Torino, Italy, 1-3 July 2015.
- [50] Soldatos, D., Triantafyllou, S.P., Chatzi, E.N., "On the constitutive modeling of dual-phase steels at finite strains a generalized plasticity based approach", Forming Technology Forum 2015, June 29 & 30, 2015, Zurich, Switzerland.
- [49] Chatzi, E., and Spiridonakos, M., "Use of a Stochastically Enhanced Framework for the Modeling of Uncertain Dynamical Systems", 18. Symposium "Bauwerksdynamik und Erschütterungsmessungen", 29 May 2015, Empa Dübendorf
- [48] Escallón, J., Bartelt, P., and Chatzi, E. (2015), "Application of a General Contact Algorithm for Impact Analysis of Rockfall Barriers", Proceedings of COMPDYN 2015, May 25-27, 2015, Crete Island, Greece.

- [47] Leyder, C., Dertimanis, V., Chatzi, E, and Frangi, A. "Optimal Sensor Placement for the Modal Identification of an Innovative Timber Structure", Proceedings of UNCECOMP 2015, May 25-27, 2015, Crete Island, Greece.
- [46] Eftekhar-Azam, S., Dertimanis, V., Chatzi, E., and Papadimitriou, C., "Output only schemes for input-state-parameter estimation of linear systems", Proceedings of UNCECOMP 2015, May 25-27, 2015, Crete Island, Greece.
- [45] Ferrari, R., Pioldi, F., Rizzi, E., Gentile, C., Chatzi, E., Klis, R., Serantoni, E., Wieser, A. "Heterogeneous Sensor Fusion for Reducing Uncertainty in Structural Health Monitoring", Proceedings of UNCECOMP 2015, May 25-27, 2015, Crete Island, Greece.
- [44] Ferrari, R., Froio, D., Chatzi, E., Gentile, C., Pioldi, F., Rizzi, E. "Experimental and Numerical Investigations for the Structural Characterization of a Historic RC Arch Bridge, Proceedings of COMPDYN 2015, May 25-27, 2015, Crete Island, Greece
- [43] Faraonis, P., Sextos, A., Chatzi, E., Zabel, V. "Model Updating of a Bridge-Foundation-Soil System Based on Ambient Vibration Data", Proceedings of COMPDYN 2015, May 25-27, 2015, Crete Island, Greece.
- [42] Eftekhar-Azam, S., Chatzi, E., Papadimitriou, C., and Smyth, A.W. (2015), "Experimental Validation of the Dual Kalman Filter for Online and Real-time State and Input Estimation", IMAC-XXXIII, A Conference and Exposition on Structural Dynamics, 2-5 February 2015, Orlando, United States.
- [41] Dertimanis, V.K., Spiridonakos, M.D. and Chatzi, E.N. (2015), "Dispersion-corrected, Operationally Normalized Stabilization Diagrams for Robust Structural Identification", Proceedings of IMAC-XXXIII, A Conference and Exposition on Structural Dynamics, Orlando, FL, USA.
- [40] Lalas, A., Dertimanis, V.K., Antoniadis, I.A., and Chatzi, E.N. (2015), "Considerations towards the application of low-frequency locally resonant metamaterials for earthquake hazard mitigation", Proceedings of Engineering Mechanics Institute (ASCE) 2015 International Conference, January 7-9, Hong Kong.
- [39] Klis, R. Chatzi, E., "Model-based Data Compression for Vibration Monitoring using Wireless Sensor Networks", Proceedings of the 4th International Symposium on Life-Cycle Civil Engineering (IALCCE 2014), November 16-19 2014.
- [38] Azam, S.E., Papadimitriou, C., and Chatzi, E., "Recursive Bayesian filtering for displacement estimation via output-only vibration measurements", Proceedings of the 2014 World Congress on Advances in Civil, Environmental, and Materials Research (ACEM12)" 24-28 August, 2014, Busan, Korea.
- [37] Leyder, C., Wanninger, F., Frangi, A., and Chatzi, E., "Field testing on innovative timber structures", Proceedings of the 2014 World Conference on Timber Engineering (WCTE 2014), August 10-14 in Quebec City, Canada.
- [36] Dertimanis, V., and Chatzi, E., "A hybrid evolution strategy approach to the structural identification problem via state-space models", Proceedings of the 6th World Conference on Structural Control and Monitoring, July 15-17 2014, Barcelona, Spain.
- [35] Chatzis, M., Chatzi, E., and Smyth, A.W., "Chatzis, M., Chatzi, E., and Smyth, A.W., "Identification of an experimental structure using heterogeneous observable sensor setups", Proceedings of the 6<sup>th</sup> World Conference on Structural Control and Monitoring, July 15-17, 2014, Barcelona, Spain.
- [34] Miah, M.S., Chatzi, E., and Weber, F., "MR Damper based Vibration Mitigation using an enhanced Bouc-Wen Model and a Nonlinear Observer", Proceedings of the 6<sup>th</sup> World Conference on Structural Control and Monitoring, July 15-17, 2014, Barcelona, Spain.

- [33] Triantafyllou, S., and Chatzi, E.., "Risk Analysis of Composite Structures by Subset Estimation using the Hysteretic Multiscale Finite Element Method", Proceedings of the 2<sup>nd</sup> International Conference on Vulnerability and Risk Analysis and Management and the 6<sup>th</sup> International Symposium on Uncertainty Modelling and Analysis, ASCE-ICVRAM-ISUMA 2014, 13-16 July, 2014, Liverpool, UK.
- [32] Chatzis, M., Chatzi, E., and Smyth, A.W., "Observability and identifiability methods for structural dynamic systems" Proceedings of the 2<sup>nd</sup> International Conference on Vulnerability and Risk Analysis and Management and the 6<sup>th</sup> International Symposium on Uncertainty Modelling and Analysis, ASCE-ICVRAM-ISUMA 2014, 13-16 July, 2014, Liverpool, UK.
- [31] Dertimanis, V., and Chatzi, E., "Dispersion Corrected Stabilization Diagrams for model order assessment in Structural Identification", Proceedings of the 7th Workshop on Structural Health Monitoring, July 8-11, Nantes, France.
- [30] Spiridonakos, M., and Chatzi, E., "Identification and Damage Detection of a Shear Frame Model based on a Blind Source Separation method", Proceedings of the 7th Workshop on Structural Health Monitoring, July 8-11, Nantes, France.
- [29] Spiridonakos, M., and Chatzi, E., "Polynomial chaos expansion models for SHM under environmental variability", Proceedings of Eurodyn 2014, 9th International Conference on Structural Dynamics, June 30 July 2, 2014, Porto, Portugal.
- [28] Leyder, C., Chatzi, E., and Frangi, A., "On-site tests on innovative hybrid structures", Proceedings of the IABSE Workshop 'hybrid2014 by iabse.ch', Exploring the Potential of Hybrid Structures for Sustainable Construction, June 22-24, 2014, in Fribourg, Switzerland.
- [27] Felkner, J. and Chatzi, E., "Effect of Structure and Morphology on Natural Ventilation Potentials, Comfort, and Energy Use in Tall Buildings", Lighting, acoustics and building physics Proceedings of 8th Windsor Conference: Counting the Cost of Comfort in a Changing World, Cumberland Lodge, Windsor, UK, 10-13 April 2014, London: Network for Comfort and Energy Use in Buildings.
- [26] Schöbi, R., and Chatzi, E.N., "Maintenance Planning Under Uncertainties Using a Continuous-state POMDP Framework", Proceedings of the IMAC XXXII, A Conference and Exposition on Structural Dynamics, 3-6 February, 2014, Florida USA.
- [25] Asgarieh, E., Moaveni, B., Nozari, A., Barbosa, A.R., and Chatzi, E., "Nonlinear Identification of a Seven-Story Shear Wall Building Based on Numerically Simulated Seismic Data", Proceedings of the IMAC XXXII, A Conference and Exposition on Structural Dynamics, 3-6 February, 2014, Florida USA.
- [24] Klis, R., and Chatzi, E., "Wireless sensor network powered by Dye-sensitized solar cells", Proceedings of the 6th International Conference on Structural Health Monitoring of Intelligent Infrastructure, Hong Kong, 9-11 December 2013.
- [23] Bischof, P., Suter, R., Chatzi, E., and Lestuzzi, P., "Mechanical anchorage of CFRP sheets retrofitting masonry walls", Proceedings of the second International Conference on Smart Monitoring, Assessment and Rehabilitation of Civil Structures, SMAR 2013,9-11 September 2013, Istanbul.
- [22] Charalampous, E., Guillaume, S., Psimoulis, P., Spiridonakos, M., Klis, R., Bürki, B., Rothacher, M., Chatzi, E., Luchsinger, R., Galliot, C., and Gauthier L., "Measuring sub-mm structure displacements using QDaedalus: a digital clip-on measuring system developed for Total Stations", 2nd Joint International Symposium on Deformation Monitoring (JISDM), 9-11 September, 2013, Nottingham
- [21] Spiridonakos, M., and Chatzi, E., "Metamodeling of uncertain structural systems based on wavelet transform decomposition", Tsompanakis, (Editor), "Proceedings of the Third International Conference on Soft Computing Technology in Civil, Structural and Environmental Engineering", Civil-Comp Press, Stirlingshire, United Kingdom, paper #, 2013. doi:10.4203/ccp.103.#

- [20] Miah, M.S., Chatzi, E.N., and Weber, F., "Semi-active control of structural systems with uncertainties using an unscented Kalman filter", Proceedings of SEMC 2013: The Fifth International Conference on Structural Engineering, Mechanics and Computation, 2-4 September 2013, Cape Town, South Africa.
- [19] Felkner, J., Chatzi, E., and Kotnik, T., "Architectural Feedback in the Structural Optimization Process, Proceedings of the Second International Conference on Structures and Architecture, 24-26 July 2013, Guimarães, Portugal.
- [18] Chatzi, E.N, and Klis, R., "Nonlinear System Identification using a UKF enhanced ERA framework", Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures Proceedings of the 11th International Conference on Structural Safety and Reliability, ICOSSAR 2013, June 16-20, 2013, Columbia University, New York, NY, pp 1893-1900.
- [17] Spiridonakos, M., and Chatzi, E., "Metamodeling of structural systems with parametric uncertainty subject to stochastic excitation", Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures Proceedings of the 11th International Conference on Structural Safety and Reliability, ICOSSAR 2013, June 16-20, 2013, Columbia University, New York, NY, pp 2187-2194.
- [16] Triantafyllou, S.P. and Chatzi, E., "A novel Hysteretic Multiscale Finite Element Method for Nonlinear Dynamic Analysis of Heterogeneous Structures", Safety, Reliability, Risk and Life-Cycle Performance of Structures and Infrastructures - Proceedings of the 11th International Conference on Structural Safety and Reliability, ICOSSAR 2013, June 16-20, 2013, Columbia University, New York, NY, pp 979-986.
- [15] Spiridonakos, M., and Chatzi, E., "UKF Estimation of SP-TARMA Models for the Identification of Time-Varying Structures", Proceedings of COMPDYN2013, June 12-14, 2013, Kos, Greece.
- [14] Triantafyllou, S.P., and Chatzi, E., "A three Dimensional Multiscale formulation for the Nonlinear Dynamic Analysis of Masonry Structures", Proceedings of COMPDYN2013, June 12-14, 2013, Kos, Greece.
- [13] Escallón, J.P., Bartelt, P., Wendeler, C., and Chatzi, E., "Improved Physical Modeling of Rock Impacts on Protection Barriers using a General Contact Algorithm", Proceedings of COMPDYN2013, June 12-14, 2013, Kos, Greece.
- [12] Felkner, J., Chatzi, E., Kotnik, T., "Interactive Particle Swarm Optimization for the Architectural Design of Truss Structures", Proceedings of the 2013 IEEE Symposium Series on Computational Intelligence, IEEE SSCI 2013, April 16-19, Singapore.
- [11] Chatzi, E., and Fuggini, C., "Structural identification of a super-tall tower by GPS and accelerometer data fusion using a multi-rate Kalman filter", Proceedings of the 3th International Symposium on Life-Cycle Civil Engineering (IALCCE 2012), October 3-6, 2012.
- [10] Spiridonakos, M., and Chatzi, E., "Metamodeling of Structural Systems through Sparse Polynomial Chaos Expansion", Proceedings of the International Conference on Noise and Vibration Engineering, September 2012, Leuven, Belgium.
- [9] Teferra, K., and Chatzi, E., "Simulating Two-Phase Microstructures Using Level-cut Filtered Poisson Fields and Genetic Algorithms," Proceedings of the International Conference on Applied Statistics and Probability, August 1-4, 2011, ETH Zurich, Switzerland.
- [8] Smyth, A.W., and Chatzi, E., "Application of differential GPS sensing on long-span bridges with accelerometer data fusion", Proceedings of Eurodyn 2011, 8th International Conference on Structural Dynamics, July 4 6, 2011, Leuven, Belgium.
- [7] Chatzi, E., and Smyth, A.W., "Experimental identification of the base excitation of a shear-type structure subjected to ground motion", Proceedings of Eurodyn 2011, 8th International Conference on Structural Dynamics, July 4 6, 2011, Leuven, Belgium.

- [6] Fuggini C., Chatzi E., Zangani D., and Messervey T. B.," Innovative Multifunctional Reinforcement Technology for Masonry Buildings: Numerical Validation and Damage Detection Investigation", Proceedings of COMPDYN2011, May 25-28, 2011, Corfù, Greece, paper n° 271.
- [5] Kotsidas, P., Chatzi, E., and Modi, V., "Stationary SMS lenses for concentrating photovoltaics", Proc. SPIE 7785, 77850C (2010), DOI:10.1117/12.863073
- [4] Chatzi, E.N., Waisman, H., and Smyth, A.W., "Detection of Structural Flaws using the XFEM Method & a novel Genetic Algorithm", EMI 2010 Conference, August 8-11, 2011, USC, Los Angeles, CA (finalist in the Computational Mechanics student paper competition).
- [3] Chatzi, E.N., and Koumousis, V.K., "Optimal Inelastic Design of Multistorey Reinforced Concrete Buildings towards Uniform Distribution of Minimal Damage", International Conference on Structural Engineering Dynamics, 22-24 June 2009, Ericeira, Portugal.
- [2] Koumousis, V.K., Chatzi, E.N., and Triantafillou, S.P, "Plastique A Computer Program for 3D Inelastic Analysis of Multi-Storey Buildings", Proceedings of an International Conference on Advances in Engineering Structures, Mechanics & Construction, held in Waterloo, Ontario, Canada, May 14-17, 2006.
- [1] Chatzi, E.N., Triantafillou, S., and Koumousis, V., "Plastique-A Computer Program for 3D Inelastic Analysis of R/C Structures", Gracm 05, Limassol, Cyprus, 2005 Solid Mechanics And its applications, 2006, Volume 140, pages 367-380.